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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/574,216	03/31/2006	Tomohito Ota	040302-0559	7918

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FOLEY AND LARDNER LLP  
SUITE 500  
3000 K STREET NW  
WASHINGTON, DC 20007

EXAMINER
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MCCLENDON, SANZA L

ART UNIT	PAPER NUMBER
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1796

MAIL DATE	DELIVERY MODE
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11/10/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/574,216	<b>Applicant(s)</b> OTA ET AL.	
	<b>Examiner</b> Sanza L. McClendon	<b>Art Unit</b> 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 31 March 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/06 and 8/08</u> .   | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Double Patenting*

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1-7 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-19 of U.S. Patent No. 6, 884, 827, as evidenced by JP2004-331814. Although the conflicting claims are not identical, they are not patentably distinct from each other because they comprise overlapping subject matter. The primary difference is US 6,884,827 comprises, in addition to a modified-fluororesin, a non-modified fluororesin and a synthetic resin having a surface energy

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ranging from +0 N/cm to  $20 \times 10^{-5}$  N/cm, a metal powder having a specified hardness level, wherein the modified fluoro resin is modified by exposing to radiation. However, the examiner deems that said metal powder is not excluded from the composition as instantly defined. Especially since metal powders are known additives in compositions comprising radiation modified fluororesins, non-modified fluororesins, synthetic resins to tailor the abrasion resistance, creep resistance, and friction characteristics of the cured composition as evidenced by JP2004-331814 (see examples).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto et al (JP2004-331814, herein after JP'814) in view Matsumoto (JP06-051679, herein after JP'679) as evidenced by Solvay Advanced Polymers, LLC product data sheet.

5. JP'814 sets forth a molding composition, for use as a slide member or a dynamic seal among other things, comprising a composition comprising a modified fluoro resin, a non-modified fluoro resin, and a polyamide-imide resin—see abstract. Said modified fluoro resin is modified by exposing a fluoro resin to radiation dose from 1 kGy to 10 MGy in an inert atmosphere with a partial pressure of 10 or less torr (9.995 kpa) wherein said fluoro resin is in a thermal environment of a temperature above the melting point of the fluoro resin--see [0014]. The modified fluoro resin comprises from 5-50 parts by weight, the polyamideimide is found in amounts from 5 to 20 parts by

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weight in the composition, wherein JP'814 sets forth that the combined amount of modified fluoro-resin and the polyamide in the composition is from 10 to 60 parts by weight based on the total weight of the composition. Thus it is deemed that the unmodified fluoro-resin is found in amounts from 40 to 90 parts by weight based on the total weight of the composition. Regarding claim 3, it is deemed that this ratio is found in the examples of JP'814--see table on page 6 of 8. Regarding claim 5 and the surface energy limitation, JP'814 teaches using a polyamideimide polymer under the Tradename Torlon® 400TF, which is described as having a particle size ranging from 1 to 150 microns with 95% of the particles less than 75 microns and said polyamideimide is deemed to be in the same surface energy ratio as defined in the claims. Regarding claim 6, this is a future intended use and as such is given no patentable weight--see *In re Pearson*, 181 USPQ 641.

JP'814 does not expressly teach that said dynamic seal or sliding member is used for operating oil hermetically and is attached to an annular seal ring groove provided on an outer circumference of a shaft member, wherein said seal ring comprises an inner ring circumferential surface facing an inside thereof in a radius direction, an outer ring circumferential surface facing an outside thereof in a radius direction, and a pair of side ring surfaces facing both sides thereof in an axial direction and when oil is applied to the seal ring the outer ring circumferential surface is pressed against the inner circumferential surface of a housing, and one of the side ring surfaces is pressed against a side surface of the seal ring groove, wherein as a result the oil pressure is retained. However, it is known to use seal rings obtained from fluoro-resin compositions to seal oil hermetically, wherein the seal ring is attached to an annular seal ring groove provided on an outer circumference of a shaft member as found in the teaching of JP'679. Therefore the examiner deems that it would have been obvious for a skilled artisan, at the time of the invention, to use the seal ring described by JP'814 in a method of use, i.e., for operating oil hermetically, as taught by JP'679. The motivation would have been a reasonable expectation of providing a hermetically sealed oil operating system with a seal ring that has improved abrasion resistance and creep resistance for optimizing the sliding/seal conditions of said operating system, as taught by JP'814, in the evidence to the contrary and/or unexpected results.

6. Claims 1-11 are rejected under 35 U.S.C. 103(a) as being obvious over Ota et al (2004/0082701) in view of Fukunaga et al (US 5,428,096) and Matsumoto et al (JP 06-051679, herein after JP'679).

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

Ota et al sets forth a thermoplastic resin composition for use as a sliding member in an automotive internal combustion engine. Said composition comprises compounding a mixture of a thermoplastic resin, including a fluororesin, and another thermoplastic resin other than the fluororesin. Said fluororesin is modified by exposure to radiation in a dose range from 1 kGy to 10 MGy in which the fluororesin is heated at a temperature that is not lower than the melting point of the fluororesin, in an inert atmosphere with an oxygen partial pressure of less than 1.33 kpa—see [0016]. Said fluororesin is found in amounts from 5 to 40 parts by weight and said other thermoplastic resin is found in amounts from 95 to 60 parts by weight. The other thermoplastic resin is described as a polyamide resin having a surface energy of +0 N/cm to +20 N/cm, wherein polyamideimide is described a thermoplastic resin having these properties for use in the composition--see [0041], [0042], and example 2.

Ota et al does not expressly teach the addition of an un-modified fluororesin in the composition. However it is known from the teaching of Fukunaga et al that

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compositions comprising mixtures of fluororesins, crosslinked fluororesins, and filler compounds having surface energies higher than copper. Fukunaga et al sets forth that said mixtures improve the oil-resistance, as well as, improving the physical and mechanical properties in cured products obtained from using said mixtures when compared to cured product obtained from using un-modified fluororesin alone or crosslinked (either by irradiation methods or chemical methods, such as peroxides) fluororesin alone—see column 1, lines 30-62 and column 1, lines 65 to column 2, line 2. Therefore the examiner deems that one of ordinary skill in the art would have found it obvious to add un-modified fluororesin, as taught by Fukunaga et al, in the composition as described in Ota et al. The motivation would have been a reasonable expectation of success of achieving comparable results based upon the disclosure of Fukunaga et al in the absence of evidence to the contrary and/or unexpected results.

Ota et al and Fukunaga et al do not expressly teach that said seal rings are used for operating oil hermetically and is attached to an annular seal ring groove provided on an outer circumference of a shaft member, wherein said seal ring comprises an inner ring circumferential surface facing an inside thereof in a radius direction, an outer ring circumferential surface facing an outside thereof in a radius direction, and a pair of side ring surfaces facing both sides thereof in an axial direction and when oil is applied to the seal ring the outer ring circumferential surface is pressed against the inner circumferential surface of a housing, and one of the side ring surfaces is pressed against a side surface of the seal ring groove, wherein as a result the oil pressure is retained. However, it is known to use seal rings obtained from fluororesin compositions to seal oil hermetically, wherein the seal ring is attached to an annular seal ring groove provided on an outer circumference of a shaft member as found in the teaching of JP'679. Therefore the examiner deems that it would have been obvious for a skilled artisan, at the time of the invention, to use the seal ring described by Ota et al combined with Fukunaga et al in a method of use, i.e., for operating oil hermetically, as taught by JP'679. The motivation would have been a reasonable expectation of providing a hermetically sealed oil operating system with a seal ring that has improved abrasion resistance and creep resistance for optimizing the sliding/seal conditions of said operating system, as taught by the combination of Ota et al and Fukunaga et al., in the evidence to the contrary and/or unexpected results.

***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. 5,223,358 to Yamada et al teaches compositions comprising irradiated fluororesins and polyamideimides. There is no mention of adding un-irradiated fluororesins in the composition. US 2004/0131401 and US 6,895,208 to Nakatogawa et al sets forth sliding members for electrophotographic devices made from irradiated fluororesins with polyamideimides. There is no teachings of the addition of un-irradiated fluororesins.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sanza L. McClendon whose telephone number is (571) 272-1074. The examiner can normally be reached on Monday through Friday 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571) 272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Sanza L McClendon/  
Primary Examiner,  
Art Unit 1796

SMc



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